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(1990) April 4th

A 6976-2C

Claims Non-Claims No. of Claim Clause: 1 (1 Page Total)

(54) Title of the Invention: Porous Body to Adjust Ink of Writing Instrument

(21) Filing Number: Sho63-127520

(22) Date of Application: Sho63 (1988) September 29th

(72) Inventor: Yoshihiro Wada, 4-1-8 Yoshi-Cho Soka City, Saitama Prefecture Pentel Corporation's Soka Plant

(72) Inventor: Kazuki Suzuki, 4-1-8 Yoshi-Cho Soka City, Saitama Prefecture Pentel Corporation's Soka Plant

(73) Applicant: Pentel Corporation 7-2 Koami-cho Nihonbashi Chuo Ward Tokyo

(74) Agent: Patent Attorney Sadao Ito

(57) Scope of Claim of Utility Model

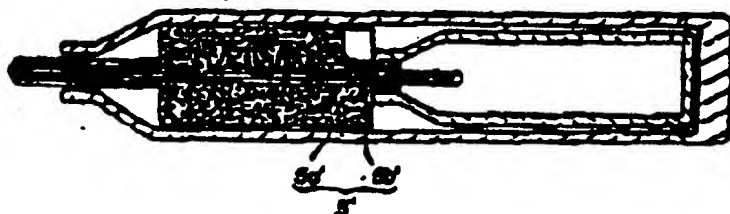
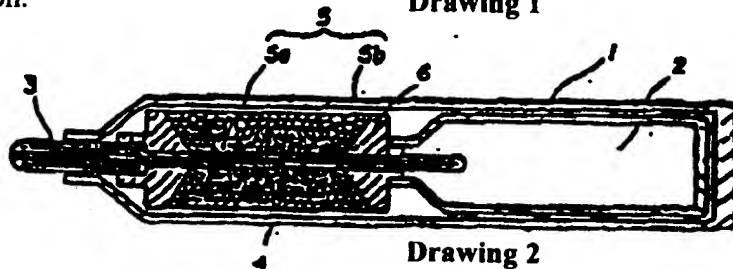
As for a writing instrument that places an ink delivery body between the ink reservoir and foremost tip of writing body, the strength of the narrow brush tube of the porous body used for ink adjustment purposes in a writing instrument, which is placed on that exterior surrounding upon coming into contact with the ink delivery body, strengthens the neighboring portion of the ink delivery body, whereby weakening the outward portion in comparison to the neighboring portion.

Simple Explanation of Drawings

Drawing 1 is a frontal cross-sectional view of the 1st embodiment example in this invention, and Drawing 2 is a frontal cross-sectional view of the 2nd embodiment example in this invention.

1...axial tube, 2...ink reservoir, 3...body of writing instrument, 4...ink delivery body, 5, 5'...porous body for ink adjustment, 5a, 5a'...central portion, 5b, 5b'...outward portion.

Drawing 1



* * Inspection Response [S1] * * File (U) Company (P008) 03/26/2001 1/ 1
*** Application Sho63-127520[9/29/Showa 63 (1988) Claim (1) Type of Application
(regular) ***

Date of Disclosure Sho02-48377[4/4/Heisei 2] Disclosure [] Registration []
Publication Date []

Title of Invention: Porous Body for Ink Adjustment of a Writing Instrument

Applicant: 13-352045 Pentel (Inc.)

Inventor: Yoshihiro Wada, Kazuki Suzuki

I P C B43K 8/02 B43K 8/02

F I B43K 8/02 A B43K 8/02 L

Official Region 301 ()

Agent: Sadao Ito (7672) Others (0)

Priority of Claim () [] () [] ()

Classify by Related Items () Original Application No. () Original
Registration No. ()

Standard Date (Application Date) [9/29/Showa 63 (1988) ?* Date[] ()

No. of Valid Inspection Challenge () No. of Claim Clauses (001) Transfer of
Rights/Enforced ?* ()

Type of Assessment (Rejection Assessment-02) (9/12 Heisei 7 (1995) Final Disposition ()
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Type of Assessment (regular inspection)

Inspection Record

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(A23 No. of Notice Sho 63. 10.21 :) (A621 Inspection Claim Hei4 9. 1, 32000:)

(A131 Rejection Reason: Hei6 12.20 :) (A523 Revision Hei7 2.21. :)

(A53 Opinion Doc., Hei7. 2.21, :) (A131 Rejection Reason Hei7 5.2. :)

(A313 Return Opinion, Hei7, 7. 31, :) (A02 Inspect Rejection Hei 7. 9. 12, :)

***Judgment [] By Type [] ***

Judgment Claimant -

Agent for Claimant () No. of Valid Objections ()

Non-Claimant -

Objector () -

Claim Clause for Challenge (Objection)() () Objection Decision by Type () []

Final Judgment () Definite Date []

Type of Objection Decision () - - - - -

Type of Judgment - - - - -

Award/?* Record

Registration Record

Final Delivery Date

Decision Rendered Date for this Case [] Closed Registration Date []

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Publication of Unexamined Patent Application Heisei 2-48377

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(74) Agent: Patent Attorney Sadao Ito

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DESCRIPTION

1. Title of the Invention

Porous (multi-hole) body for ink adjustment of writing instrument

2. Scope of Claim of Utility Model

As for a writing instrument that arranged an ink delivery body between the ink reservoir and tip of writing body, the strength of the narrow brush tube of the porous body used for ink adjustment purposes in a writing instrument, which is placed on that exterior surrounding upon coming into contact with the ink delivery body, strengthens the neighboring portion of the ink delivery body, whereby weakening the outward portion in comparison to the neighboring portion.

3. Detailed Description of the Invention

(Industrial Field of Application)

This invention concerns a porous body to adjust the ink of a writing instrument where the ink delivery body is placed between the ink reservoir and the foremost tip of the writing body.

(Conventional Technology)

In conventional terms, as indicated in Public Report Public Disclosure Sho59-12229, as for a writing instrument that is capable of having ink from the ink reservoir flow to the body of the pen via an ink path, an ink absorber is placed at the exterior of the foremost tip portion of the ink leading tube,

(Translator's note: 'page 1' in original Japanese hard copy; 985 Disclosure 2 - 4837)

PUBLIC DISCLOSURE USE HEISEI 2 (1990) - 48377

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and the density level of that foremost portion will be greater than the other portions; the external air would pass through the ink absorber from the previously mentioned rear tip the ink absorber as in passing through the inside of the ink leading tube, and the ink distribution regulating device that forms an air passage is public knowledge.

(Problem the Invention is Trying to Solve)

As for the a forementioned conventional technology, it is acceptable to focus on the views concerning the density level of the ink absorber, but the view was still inadequate in terms of the scope disclosed by the aforementioned conventional technology.

(Means to Solve the Problem)

This invention's objective is to absorb only the excess ink; as for the writing instrument that places an ink delivery body between the ink reservoir and the foremost tip of the writing body, the strength of the narrow brush tube of the porous body employed for ink adjustment purposes that is placed that external surrounding upon coming into contact with the ink delivery body strengthens the neighboring portion of the ink delivery body while weakening the outward portions in comparison to the former. This feature is a unique characteristic of this invention.

The invention will be explained in detail as follows based on the drawn embodiment examples. Drawing 1 is the 1st embodiment example where 1 is the axial tube, 2 is the ink reservoir, 3 is the tip of axial tube 1 of the writing body,

(Translator's note: page 2 in original Japanese hard copy; 986)

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and ink delivery body 4 formed from a bundle of filament located between ink reservoir 2 and writing instrument 3 is placed as a single body with writing body 3 or as a separate body. 5 is the porous body employed for ink adjustment purpose in this invention, and a narrow tube brush is formed by inserting and pushing through a forming agent inside the urethane, rubber, etc.; compress central portion 5a in the direction of the axis whereby the strength of the narrow tube brush of central portion 5a becomes stronger, and the strength of the narrow tube brush of outward portion 5b becomes weaker than 5a. 6 secures an atmospheric exchange slot besides being a compressed part material forming the compression of the aforementioned axial direction. If this type of compressed part material is used, it would then become unnecessary to go through the trouble of preparing part materials that possess variations in minimizing or maximizing the strength of the narrow tube brush, thereby making it clearly more convenient to use.

Next, explanations will be provided on usage. The ink inside ink reservoir 2 passes through ink delivery body 4 and is then delivered to writing instrument 3. In addition, because central portion 5a of porous body 5 that is used to adjust the ink and is placed in the exterior surrounding of ink delivery body 4 has strong narrow tube brush strength, the ink can easily flow through central portion 5a. However, at the very least, ink does not normally flow into outward portion 5b where the strength of the narrow tube brush is weak. The air inside ink reservoir 2 expands when writing, and

(Translator's note: page 3 in original Japanese hard copy; 987)

PUBLIC DISCLOSURE USE HEISEI 2 (1990) - 48377

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when an excess amount of ink flows to ink delivery body 4, the excess ink flows into external part 5b of porous body 5, which is for ink adjustment purposes. As a result, there is no danger the ink will drip from writing body 3.

Drawing 2 is the 2nd embodiment example of this invention; porous body 5' for ink adjustment purposes does not compress central portion 5a ' in the direction of the axis, and during formation, the strength of the narrow tube brush of central portion 5 a ' is stronger than outward portion 5 b '. As for this kind of porous body 5 ', for example, fillers with charcoal calcium inside the urethane are distributed by coordinating that drop (particle) or volume according to the above and then inserted, and possible to pull this out or obtain by sintering the distributed drops in the same manner as polyethylene, polyfluoridized vinylidene, nylon, etc. In passing, as a porous body, it is also possible to use the various filter materials for other uses.

(Effect)

According to this invention, as for the writing instrument that places an ink delivery body between the ink reservoir and the foremost tip of the writing body,

(Translator's note: page 4 in original Japanese hard copy; 988)

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the strength of the narrow tube brush of the porous body that is employed for ink adjustment purposes and is placed in the exterior surroundings and comes into contact with the ink delivery body strengthens the surrounding area of the ink delivery body while allowing the outward portion to become weaker than the ink delivery portion. Therefore, ink would not normally flow to the outward portion, and when the excess ink drips, this excess ink is absorbed by the outward portion of the porous body that is used for ink adjustment purposes, thereby preventing with certainty any ink from dripping.

In addition, it is acceptable for those that have a different degree of porous quality to have polymerized placement in the axial direction.

4. Brief Explanation of Drawings

Drawing 1 is a frontal cross-section of the 1st embodiment example, and Drawing 2 is a frontal cross-section of the 2nd embodiment example in this invention.

1 ... axial tube

2 ... ink reservoir

3 ... writing body

4 ... ink delivery body

5, 5' ... porous body for ink adjustment purpose

5 a, 5 a' ... central portion

5 b, 5 b' ... outward portion

Utility Model Registration Applicant: Pentel Corporation

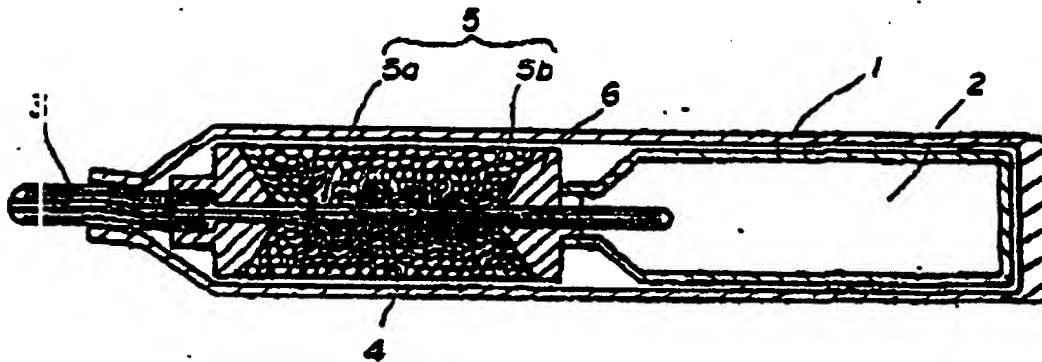
Agent: Sadao Ito*

(*Translator's note: Mr. Ito's personal seal is affixed next to his name)

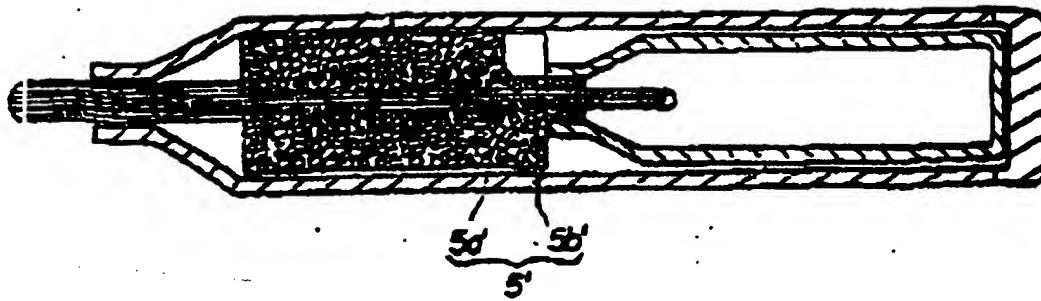
(Translator's note: page 6 in original Japanese hard copy; 989)

PUBLIC DISCLOSURE HEISEI 2 - 48377

DRAWING 1



DRAWING 2



Disclosure2 - 48377
Agent: Patent Attorney Sadao Ito